IN THE CLAIMS:

Please cancel claims 9 and 11.

Please amend claims 1, 12, and 21 as follows:

1. (CURRENTLY AMENDED)   A method of part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer;

playing the simulation model by a PLC logical verification system on the computer;

determining if the part flow represented in the simulation model is correct; ~~and~~

generating PLC code if the part flow represented in the simulation model is correct; and

using the part flow simulation model to ~~test~~ generate PLC code and implementing the manufacturing line according to the part flow simulation model.

2. (ORIGINAL)   A method as set forth in claim 1 wherein said step of constructing comprises selecting a part generator.

3. (ORIGINAL)   A method as set forth in claim 2 wherein said step of constructing further comprises generating a part with the part generator.

4. (ORIGINAL)   A method as set forth in claim 3 wherein said step of constructing further comprises moving the generated part to a location.

5. (ORIGINAL)   A method as set forth in claim 4 wherein said step of constructing further comprises testing the generated part at the part location.

6. (ORIGINAL)   A method as set forth in claim 1 wherein said step of constructing comprises constructing a record for the part.

7. (ORIGINAL)   A method as set forth in claim 6 wherein the record has at least one resource.

8. (ORIGINAL)   A method as set forth in claim 7 wherein the at least one resource has at least one capability.

9. (CANCELED)

10. (PREVIOUSLY PRESENTED)   A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

11. (CANCELED)

12. (CURRENTLY AMENDED)   A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer;

playing the simulation model by a PLC logical verification system on the computer;

executing the simulation model of the part flow, wherein the simulation model interacts with a PLC logical verification system;

determining if the part flow represented in the simulation model is correct;

~~testing~~ generating PLC code if the part flow simulation model is correct; and

using the ~~tested~~ generated PLC code and implementing the manufacturing line according to the part flow simulation model.

13. (ORIGINAL)   A method as set forth in claim 12 wherein said step of constructing comprises selecting a part generator.

14. (ORIGINAL)   A method as set forth in claim 13 wherein said step of constructing further comprises generating a part with the part generator.

15. (ORIGINAL)   A method as set forth in claim 14 wherein said step of constructing further comprises moving the generated part to a location.

16. (ORIGINAL)   A method as set forth in claim 15 wherein said step of constructing further comprises testing the generated part at the part location.

17. (ORIGINAL)   A method as set forth in claim 12 wherein said step of constructing comprises constructing a record for the part.

18. (ORIGINAL)   A method as set forth in claim 17 wherein the record has at least one resource.

19. (ORIGINAL)   A method as set forth in claim 18 wherein the at least one resource has at least one capability.

20. (PREVIOUSLY PRESENTED) A method as set forth in claim 1 including the step of modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct.

21. (CURRENTLY AMENDED)   A method for application of a part flow for a programmable logic controller logical verification system, said method comprising the steps of:

constructing a simulation model of a part flow in a manufacturing line using a computer by selecting a part generator, generating a part with the part generator, and moving the generated part to a location;

playing the simulation model of the part flow by a PLC logical verification system on the computer;

executing the simulation model of the part flow, wherein the simulation model interacts with a PLC logical verification system;

determining if the part flow represented in the simulation model is correct;

modifying the part flow represented in the simulation model if the part flow represented in the simulation model is not correct;

testing generating PLC code if the part flow simulation model is correct; and

using the ~~tested~~ <u>generated</u> PLC code and implementing the manufacturing line according to the part flow simulation model.